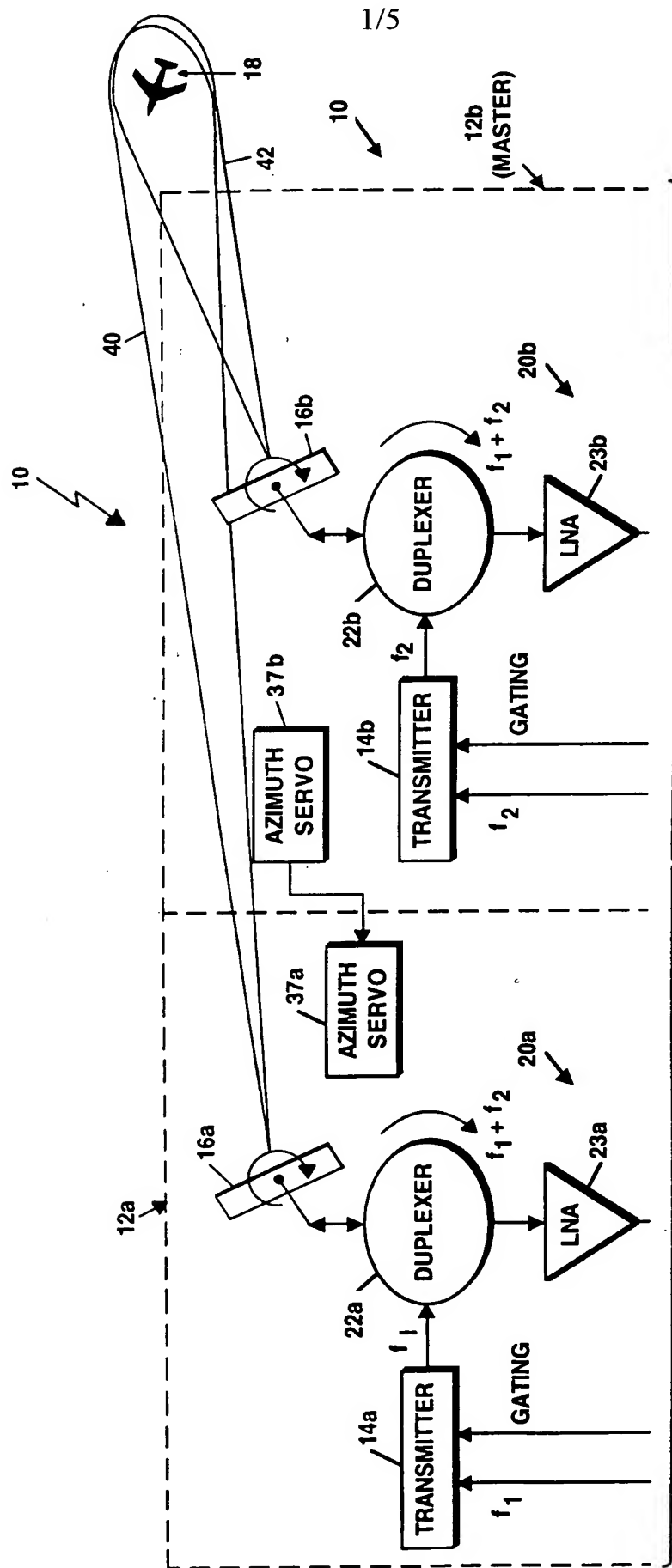MULTIPLE RADAR COMBINING FOR INCREASED RANGE,
RADAR SENSITIVITY AND ANGLE ACCURACY
Eli Brookner et al.
Application No. 10/684,081

1/5

FIG. 1A

TO FIG. 1B

MULTIPLE RADAR COMBINING FOR INCREASED RANGE,
RADAR SENSITIVITY AND ANGLE ACCURACY
Eli Brookner et al.
Application No. 10/684,081

2/5

FIG. 1B
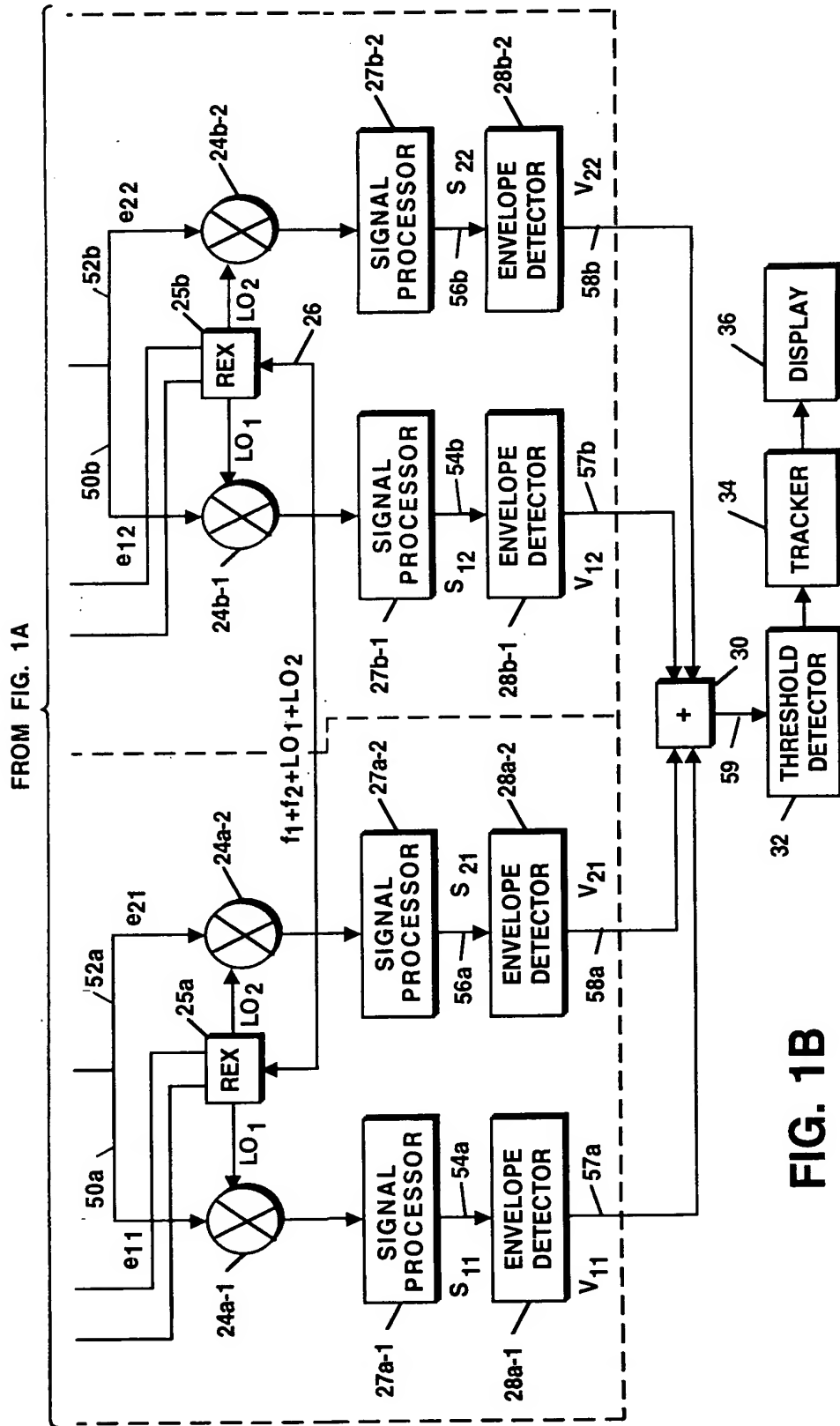
MULTIPLE RADAR COMBINING FOR INCREASED RANGE,
RADAR SENSITIVITY AND ANGLE ACCURACY
Eli Brookner et al.
Application No. 10/684,081

3/5

**FIG. 2**



**FIG. 3**

MULTIPLE RADAR COMBINING FOR INCREASED RANGE,
RADAR SENSITIVITY AND ANGLE ACCURACY
Eli Brookner et al.
Application No. 10/684,081

4/5

FIG. 4

Multiple Radar Combining for Increased Range,
Radar Sensitivity and Angle Accuracy
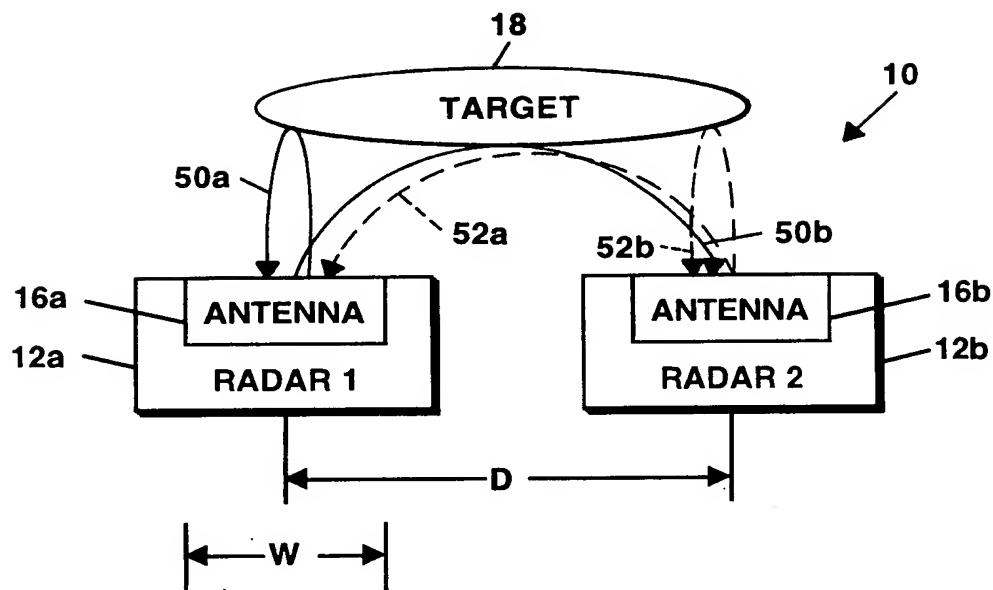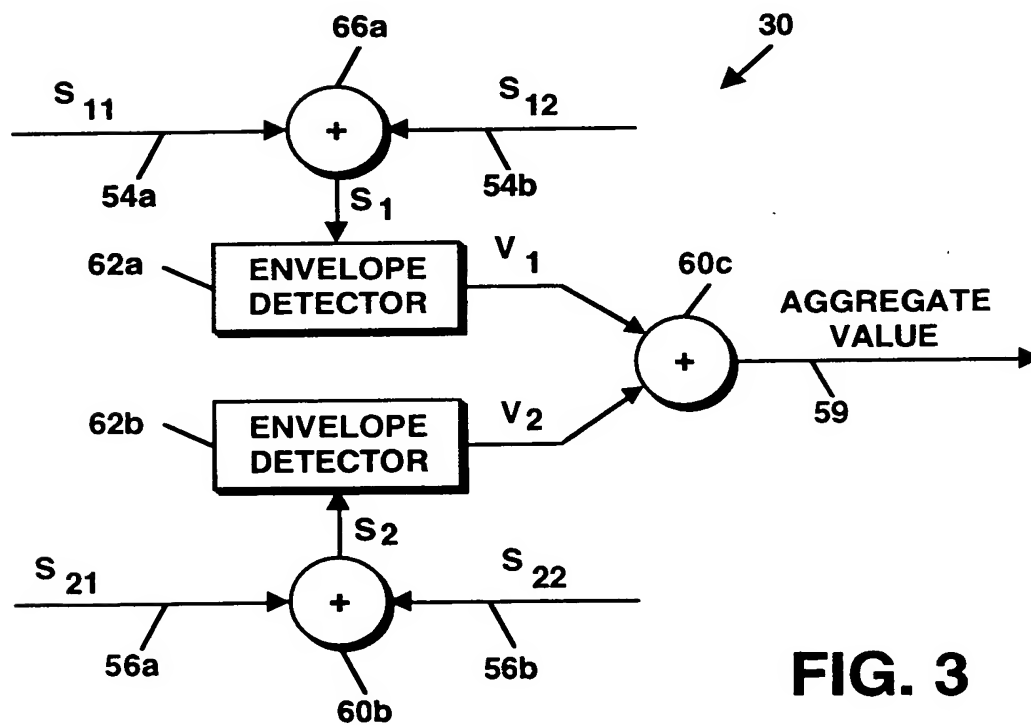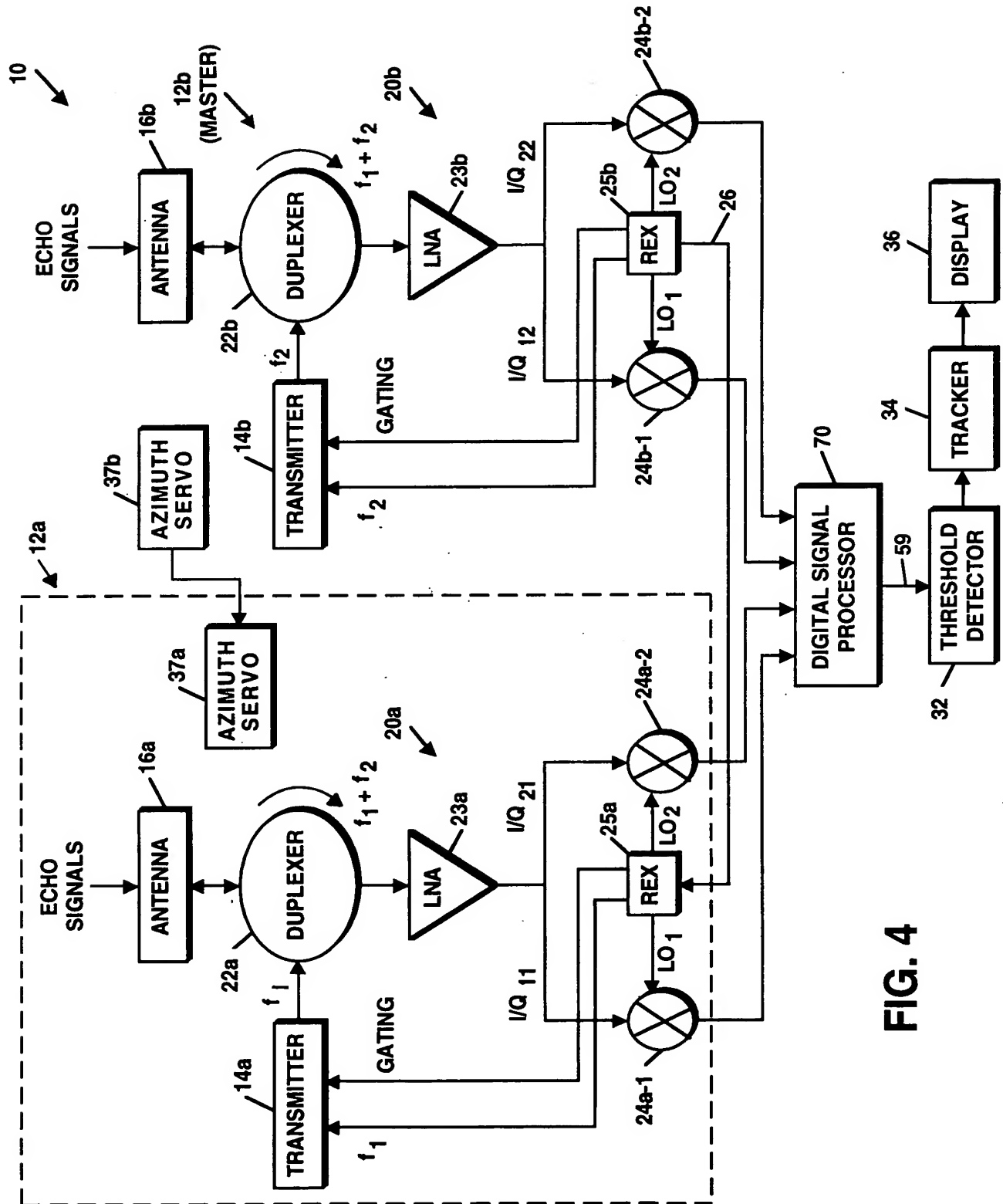Eli Brookner et al.
Application No. 10/684,081

5/5

| Mode | Carrier Frequencies for Radar 1 ($f_1$) and Radar 2 ($f_2$) | Coherent or Incoherent on Transmit | Receiver Processing of $S_{11}$, $S_{12}$ and $S_{21}$, $S_{22}$ | How Waveforms Transmitted | Type of Target | SNR Sensitivity Improvement (dB) |
|---|---|---|---|---|---|---|
| Search/ Track | $f_1 \neq f_2$ | Incoherent | Incoherent (as shown in FIG. 1) | Simultaneously | Non-fluctuating | ~6 |
| Search/ Track | $f_1 \neq f_2$ | Incoherent | Coherent + Incoherent (as shown in FIG. 3) | Simultaneously | Non-fluctuating | ~6 |
| Track | $f_1 = f_2$ | Coherent | Coherent | Simultaneously | Non-fluctuating | ~9 |
| Track | $f_1 = f_2$ | Coherent | Coherent + Incoherent | Simultaneously | Non-fluctuating | ~9 |
| Search/ Track | $f_1 = f_2$ | Incoherent | Incoherent | Sequentially | Non-fluctuating | ~6 |
| Search/ Track | $f_1 = f_2$ | Incoherent | Coherent + Incoherent | Sequentially | Non-fluctuating | ~6 |
| Search/ Track | $f_1 \neq f_2$ | Incoherent | Incoherent | Simultaneously | Swerling-II | 8.7 |

FIG. 5